



## Fourth Paper

International Scientific Symposium

**Priorities for Palestine's Economy  
in the Midst of War**

# **Innovation and Industrial Policy**

**Harnessing the knowledge  
economy for relief,  
rehabilitation and recovery  
after the war on Gaza**

Mr. Zayne Abu Daqqa

---

## **Innovation and Industrial Policy Harnessing the knowledge economy for relief, rehabilitation and recovery after the war on Gaza**

This is the Fourth Paper in a series of discussion papers prepared for the International Academic Symposium "Priorities for Palestine's Economy in the Midst of War" scheduled for December 4, 2024. These papers reflect on optional scenarios for the post-war phase, including Palestinian governance strategies, immediate socio-economic challenges and priorities, and the (legal, institutional and political) tools at the disposal of the Palestinian people to actively determine their future. They will also analyze the economic policies and strategies that are needed to support Palestine's struggle for independence, focusing on self-sufficiency, economic resilience and productive capacity, trade expansion and market diversification and sustainable growth. The issues also include concern about how to strengthen the social contract in Palestine, focusing on how governance, economic policies, and social services can be aligned to meet public expectations and foster social cohesion.

**These series of papers are prepared with the generous support of MAS's partners, and reflect the opinions of the authors.**



# 1. INTRODUCTION

The industrial sector has played a vital role in the Palestinian economy for over a century. In 2022, the industrial sector contributed approximately 11% of GDP and employed around 13% of the workforce.<sup>1</sup> While the sector's economic contribution stays much lower to its levels in 1994, when it stood for 22% of GDP and nearly 20% of employment, it can still be considered a cornerstone of Palestine's economy.<sup>2</sup> The sector includes diverse sub sectors, including food industries, furniture industries, rubber and plastics industries, chemicals and chemical products industries, basic, as well as fabricated metal industries, textiles, and pharmaceuticals.<sup>3</sup>

The war on Gaza has severely damaged Palestinian industry. The sector's productivity has been significantly hampered, showing a slowdown of 70 percent. In the Gaza Strip, over 80 percent of the industrial establishments were severely damaged or completely destroyed. The West Bank economy has not been immune either, with most sectors incurring severe setbacks.<sup>4</sup>

Recognizing that only political change will unlock structural challenges, continuing to invest in industry, enhancing its innovative capabilities and positioning it in local, regional and international markets, can pave the way for a more resilient future. However, in the absence of sovereign control of territory and resources (or any access to the Gaza Strip), a severe financial crisis, and little to know significant achievements in industrial or innovation policy prior to the current crisis, it is not possible to expect the Palestinian National Authority (PNA) to develop and implement industrial policy (let alone an innovation policy) on its own.

For this reason, this paper will not delve into existing industrial and innovation policies, which are largely absent in Palestine, but instead suggest industrial and innovation objectives that are aimed at aligning industry and innovation with recovery needs. For the immediate future rebuilding a functional industrial sector in Gaza in conjunction with upgrading that of the West Bank will remain the primary objective. Alignment of these objectives is the starting point for a dialogue between all active stakeholders, including the PNA, the private sector and international donors, on resource allocation towards and implementation of industrial and innovation policy.

The macro-economic data in this paper was sourced from the Palestinian Central Bureau of Statistics (PCBS), the Palestine Monetary Authority (PMA), and various international organizations such as the World Bank, International Labor Organization (ILO) and others. The assessment of damage to the industrial sector across the West Bank and Gaza, in addition to analysis of short and medium-term challenges and needs, relies on two recent industrial surveys conducted recently by the Palestine Federation of Industries (PFI). In the West Bank, the survey was conducted in July and August 2024 and captured data from 345 industrial establishments.<sup>5</sup> In the Gaza Strip, the survey was conducted in June and updated in October, 2024, and captured data from 1,200 industrial establishments. While these surveys focus on establishments that are members of unions affiliated with the PFI, these members represent a large segment of the sector.<sup>6</sup> Therefore,

1 PCBS. (2023). Labour Force Survey (January- March, 2023) Round. <https://tinyurl.com/3u4wd988>, and Palestine Monetary Authority. (2024). Time Series Data - Gross Domestic Product by Expenditure at Current Prices. <https://www.pma.ps/en/Statistics/TimeSeriesData>

2 PCBS. (2014). National Accounts at Current and Constant Prices 1994-2012. <https://www.pcbs.gov.ps/Downloads/book2072.pdf>; and PCBS. (1996). Labor force survey. <https://www.pcbs.gov.ps/Downloads/book35.pdf>

3 PCBS. (2018). Number of Enterprises and Employed Persons and Main Economic Indicators in Palestine For Industrial Activities. [https://www.pcbs.gov.ps/Portals/\\_Rainbow/Documents/Num\\_Enter\\_Emp\\_Main\\_2018\(E\).html](https://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Num_Enter_Emp_Main_2018(E).html)

4 PCBS. (2024). *Press Release on the Losses of Private Sector in Palestine due to the Israeli occupation Aggression on Gaza Strip*. <https://www.pcbs.gov.ps/post.aspx?lang=en&ItemID=4710>

5 Palestinian Federation of Industries. (August, 2024). Industrial Sector Survey in the West Bank. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions."

6 It is estimated that PFI members in the West Bank employ around half of all industrial sector employees. In the Gaza Strip, the sample size (1,200) constitutes over 30% of all establishments in Gaza.

in the absence of national-level data these surveys provide valuable insights into the state of industrial establishments during war (see Annex I for an overview on the survey).

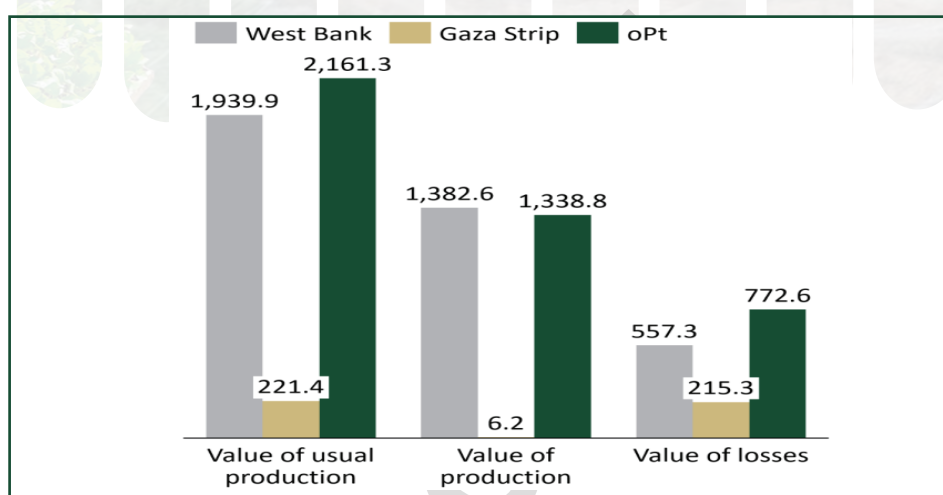
The paper starts with a review of the latest economic data available, with a focus on the impact of the war on the industrial sector. In the following section, short and medium-term challenges to the recovery industrial sector are explored, and contextualized with reference to long-standing restrictions imposed on the Palestinian economy before the war. The final section highlights development paths that rely on innovation and that have potential to support relief and recovery, even under current constraints.

## 2. PALESTINIAN INDUSTRY: ONE YEAR SINCE THE START OF THE OCTOBER 2023 WAR

### 2.1 Estimating industrial losses

With more than a year of ongoing war, the Palestinian economy is facing one of its worst crises ever, with Gaza Strip bearing the brunt of the devastation. In the first four months of the war (October 2023 – January 2024), the industrial sector in the West Bank and Gaza experienced significant losses, estimated at USD 772.6 million (see Figure 1 below).<sup>7</sup> The Gaza Strip faced significant losses, with a 97% reduction in industrial production, amounting to losses of USD 215.3 million. In the West Bank, industrial production declined by 28.7%, resulting in losses of approximately USD 557.3 million.<sup>8</sup>

**Figure 1: Value of Palestinian Industrial Losses, October 2023 to January 2024 (USD million)**



In August 2024, the industrial production index in the West Bank showed a sharp decline of 28.9% compared to August 2023, falling from 114.68 to 81.54. This indicates a substantial reduction in industrial activities, including transformational industries, non-metallic mineral products, food products, chemicals, and pharmaceuticals. One year into the war, the PCBS estimated that industrial activities dropped even further, by 35% (28% in the West Bank and 94% in Gaza Strip).<sup>9</sup>

7 PCBS. (January, 2024). Press Release on the Losses of Private Sector in Palestine due to the Israeli occupation Aggression on Gaza Strip. <https://bit.ly/3ZbNFNS>

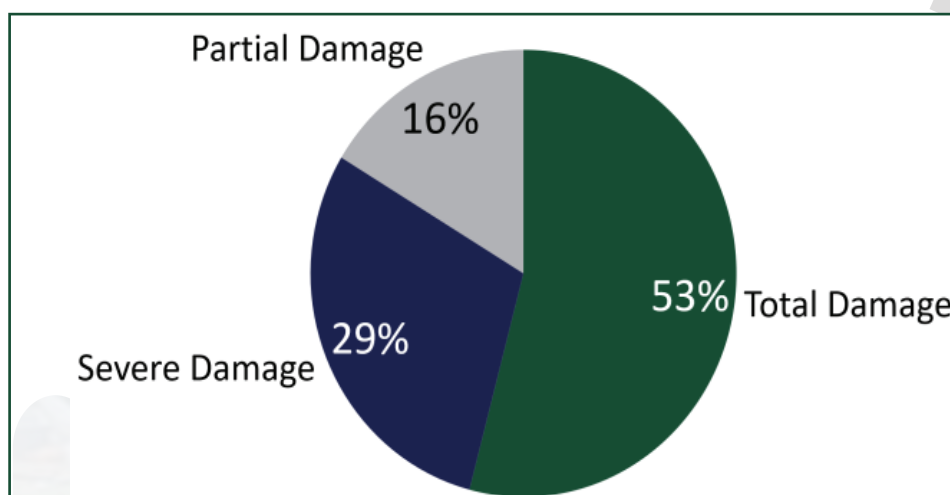
8 PCBS. (January, 2024). Press Release on the Losses of Private Sector in Palestine due to the Israeli occupation Aggression on Gaza Strip. <https://bit.ly/3ZbNFNS>

9 PCBS. (October, 2024) *The Industrial Production Index, during August, 08/2024*. <https://www.pcbs.gov.ps/post.aspx?lang=en&ItemID=5843>

## 2.2 Destruction of industrial assets and infrastructure in the Gaza Strip

According to the PFI, the industrial sector suffered extensive damage in the Gaza Strip (see Figure 2 below). The chemical, traditional, and food industries suffered the highest levels of destruction, with total damage exceeding 80% in each industrial sector. Construction, clothing and textile, and wood industries also faced severe losses, with total damage rates surpassing 60%. Severe damage is notably prominent in traditional industries, aluminum and glass, and precious metals, further underscoring the devastation in key industrial sectors.<sup>10</sup>

**Figure 2: Gaza Strip Industrial Establishments Sustained Damage**



Before the war, the Gaza Power Plant generated about 70 megawatts using diesel, funded by Qatar, while about 120 megawatts were imported from Israel. This left a deficit of about 240 megawatts in the electricity supply in the Strip, resulting in the average availability of electricity only 12 hours per day. As of 2022, solar power capacity was only 159.5 megawatts in the West Bank and 19 megawatts in the Gaza Strip.<sup>11</sup> Since the war started, there has been no central power in Gaza, as its sole power plant was forced to shut down for lack of fuel, and more than half of the territory's electrical grid has been destroyed, according to the World Bank.<sup>12</sup>

## 2.3 Cash-flow disruptions in the West Bank

According to the PFI, a staggering 77% of its members in the West Bank have been struggling to collect payments from their clients. The primary issue is not technical or logistical, but rather the financial difficulties experienced by the clients themselves. In fact, 59.4% of firms reported that their clients' own financial problems are the main hindrance to their ability to collect payments. In addition, around 44% of surveyed companies reported selling their products in Gaza prior to the war. Of these, 58.9% noted that their sales were severely affected/ completely stopped during the war.

With cash flows disrupted, indebted firms, which make up 50% of the total of PFI's West Bank members, are struggling to repay their bank loans. Around 91% of indebted firms are encountering difficulties. The primary reasons cited are a decline in sales (37%) and the difficulties in collecting payments from clients (31%), unexpected costs (17.6%) and a general fear of a worsening situation leading to avoidance of repayments (4.9%).<sup>13</sup>

<sup>10</sup> Palestinian Federation of Industries. (November, 2024). Insight into the Impact of the War on the Gaza Strip on the Industrial Sector and Proposed Recovery Interventions. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions"

<sup>11</sup> Office of the Quartet. (2023). Report to the Ad Hoc Liaison Committee - May 2023. <https://tinyurl.com/e8nakc9v>

<sup>12</sup> World Bank. (March 29, 2024). Gaza Strip interim damage assessment. <https://bit.ly/3Oi07p4>

<sup>13</sup> Palestinian Federation of Industries. (August, 2024). Industrial Sector Survey in the West Bank. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions."

## 2.4 Disruption of trade

Trade has been severely impacted by the war, with an estimated 30% loss in the value of goods exports and services and a 29% decline in the value of imports in the first year of the war (see Figure 3 below).<sup>14</sup> The volume of foreign trade in the Gaza Strip before 2006 was about 23% of Palestine’s total trade,<sup>15</sup> and 12% in 2022.<sup>16</sup> However, the percentage dropped to less than 4% during the ongoing war, as the near total cessation of supply chains to and from the Gaza Strip led to health and food catastrophes throughout all of the Strip.<sup>17</sup>

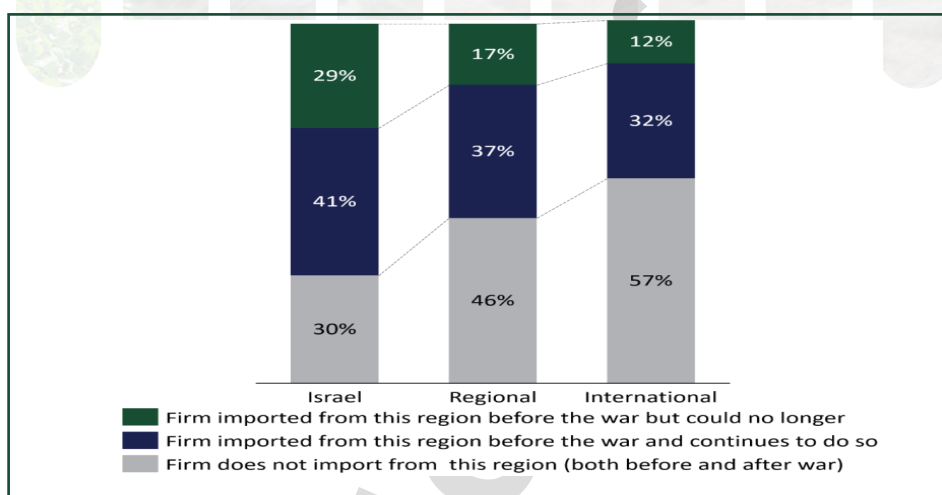
Trade restrictions are extremely harmful given the level of dependency on the Israeli market. Israel is by far Palestine’s largest trading partner, both for imports and exports. In 2022, Palestinian exports of goods and services accounted for only 18.5% of GDP while imports represented 64% of GDP, leading to a trade deficit of 45.5% of GDP - one of the highest in the world and nearly double that of similar economies.<sup>18</sup>

Analysis of trade data reveals persistent dependency on Israel, which maintained a 58% share of merchandise imports through Q3 and Q4 2023.<sup>19</sup> The fourth quarter of 2023, witnessed a substantial 28% decline in overall merchandise imports, with imports from Israel dropping by 27%. In annual terms, total merchandise imports decreased from USD 9.1 billion in 2022 to USD 7.7 billion in 2023, representing a 15.4% decline.

### 2.4.1 Shortages of raw material imports

Industrial firms that rely on input imports from Israel were the most affected by the war (see Figure 6 below). According to the PFI, 70% of its West Bank members imported inputs from Israel, and 41% of those are currently unable to do so (much higher than those importing from other sources).<sup>20</sup>

**Figure 3: Import Sources and Import Feasibility for PFI members in the West Bank, August 2024<sup>21</sup>**



14 PCBS. (Q1 2019 - Q2 2024). Foreign Trade Statistics.

15 PCBS. (October, 2024). The Palestinian Central Bureau of Statistics “PCBS” highlights the Socio-economic and Environmental Conditions after One Year of the Ongoing Israeli Occupation Aggression against Gaza Strip and the West Bank. <https://www.pcbs.gov.ps/post>.

16 PCBS. (March, 2024). Palestine in Figures - 2023. <https://www.pcbs.gov.ps/Downloads/book2693.pdf>

17 PCBS. (October, 2024). The Palestinian Central Bureau of Statistics “PCBS” highlights the Socio-economic and Environmental Conditions after One Year of the Ongoing Israeli Occupation Aggression against Gaza Strip and the West Bank. <https://www.pcbs.gov.ps/post>.

18 Palestine Monetary Authority. (2024). *Time Series Data - Gross Domestic Product by Expenditure at Current Prices*. <https://www.pma.ps/en/Statistics/TimeSeriesData>; The Global Economy. (2024). *Trade balance, percent of GDP by country, around the world*. [https://www.theglobaleconomy.com/rankings/Trade\\_balance/](https://www.theglobaleconomy.com/rankings/Trade_balance/)

19 PCBS. (October, 2024). The Palestinian Central Bureau of Statistics “PCBS” highlights the Socio-economic and Environmental Conditions after One Year of the Ongoing Israeli Occupation Aggression against Gaza Strip and the West Bank. <https://www.pcbs.gov.ps/post>.

20 Palestinian Federation of Industries (August, 2024). *Industrial Sector Survey in the West Bank*. The document was circulated by PFI on November 14, 2024, following a workshop titled “Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions.”

21 Palestinian Federation of Industries (August, 2024). *Industrial Sector Survey in the West Bank*. The document was circulated by PFI on November 14, 2024, following a workshop titled “Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions.”

## 2.4.2 Sharp fall in access to export markets

In the Gaza Strip, all export activities are reported to have stopped. In the West Bank, the export sector in Palestine faced significant challenges during the war, with heightened vulnerability stemming from dependencies on trade with Israel. According to PFI, 78% of its West Bank members that export their products target the Israeli market, while 70% rely on Israel for raw materials. This reliance made exporters particularly susceptible to disruptions during the conflict. Key issues reported included increased shipping and insurance costs (26.9% of respondents), restrictions on movement (26.4%), lack of Israeli willingness to engage (23.3%), and order cancellations (23.5%).

Dependency on trade with Israel, makes the Palestinian economy especially vulnerable to shocks. According to PFI, export-dependent sectors in the West Bank were among the hardest hit during the war. Stone and marble exports suffered a production loss of approximately 55%, reflecting their substantial reliance on international markets. By contrast, less export-reliant sectors, including pharmaceuticals and food/agriculture, reported relatively lower production losses. The data also highlights that firms deriving 50% or more of their revenues from exports were disproportionately affected by the conflict. These companies consistently experienced greater production losses, underscoring the risks associated with over-dependence on external markets for revenue generation.

## 2.5 Labor losses in the industrial sector

In the Gaza Strip industrial workers, estimated to be around 25,000 pre-October 7, have been reduced to a mere 2,000, dropping approximately 90% of the total workforce as a result of the ongoing war's destruction of lives, supply chains, and infrastructure.<sup>22</sup> According to PFI, approximately 74% of its member industrial firms in the West Bank already reduced wages and working hours, and around 37% of its laid off workers, with approximately 3,900 to 5,500 workers (14.6% of their total labor) losing their jobs during the war.<sup>23</sup> According to PFI, approximately 20% of its member industrial firms reported plans for further reductions in working hours and wages for their staff.<sup>24</sup>

The joint survey conducted by the International Labour Organization's (ILO) and the PCBS during December 2023 and January 2024 revealed a dramatic contraction in Palestinian workforce dynamics. The findings show that all firms experienced a reduction in their size from 16.2 employees on average before the conflict to 11.2 employees on average during the conflict.<sup>25</sup> In manufacturing, employment fell from 23.9 to 16.3, a 31.8% decrease, reflecting the challenges in maintaining production amid disrupted operations and supply chains. The ILO and the PCBS project that, by the end of 2024, over 100,000 workers would have lost their jobs in the West Bank and Gaza, over 21,000 of them are in the industrial sector, as seen in Figure 4 below. This figure is a projection assuming the case of the cessation of war by June 2024. As of today, war is still ongoing and the number of layoffs most probably has increased.

---

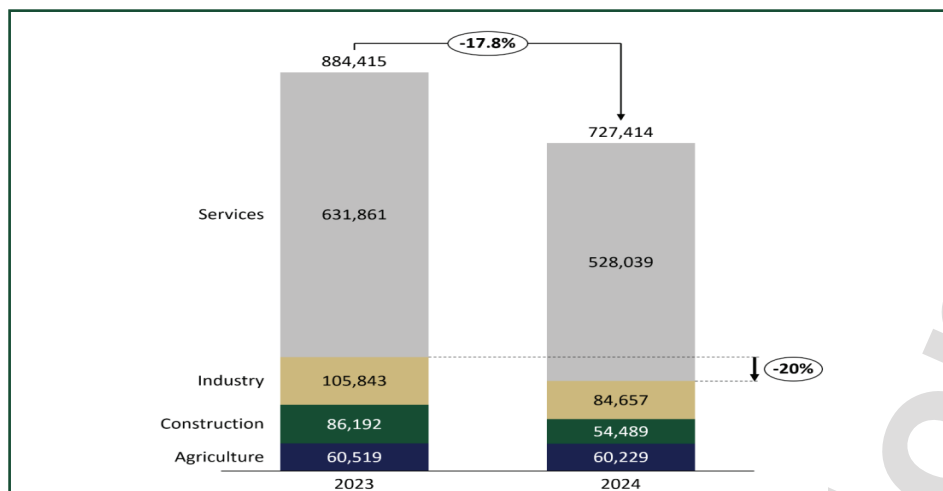
22 Al-Raee, M. (September, 2024). *Gaza's Industrial Sector: Between the Hammer of War and the Horizon of Recovery*. Almarsad. <https://tinyurl.com/bteskxnk>

23 Palestinian Federation of Industries (August, 2024). *Industrial Sector Survey in the West Bank*. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions."

24 Palestinian Federation of Industries. (August, 2024). *Industrial Sector Survey in the West Bank*. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions."

25 International Labour Organisation. (July, 2024). *Impact of the war in Gaza on private sector workers and businesses in the West Bank*. United Nations - The Question of Palestine. <https://www.un.org/unispal/document/impact-of-the-war-in-gaza-ilo-03jul24/>

**Figure 4: Employment Levels in oPt by Sector, 2023 vs 2024\* 26**



\* Assuming the cessation of war by June 2024

### 3. IMPLICATIONS FOR INDUSTRIAL DEVELOPMENT

#### 3.1 Constrained financial resources limit relief, recovery and innovation

The PNA's fiscal situation has worsened significantly since the war on Gaza began, with Israel escalating its deductions from clearance revenues. In the first half of 2024, Israel withheld ILS 1.8 billion in clearance revenues, a 312.9% increase compared to the same period in 2023. Total Israeli deductions and withheld amounts accounted for 67.8% of the PA's clearance revenues in the first half of 2024, totalling ILS 3 billion.<sup>27</sup> As a result, the PNA is in a deep fiscal crisis, the ongoing war on Gaza and the heightened uncertainty surrounding public finances drove the adoption of an emergency budget. On 22 July 2024, the Palestinian President approved an emergency budget for the 2024 fiscal year with a deficit of ILS 5.5 billion, an 181.5% increase compared to 2023.<sup>28</sup>

According to United Nations Development Program (UNDP) reports published in 2024, an early recovery program for three years to bring back hundreds of thousands of Palestinians to temporary shelters in their original locations with comprehensive community support, will cost between \$2-3 billion. The overall reconstruction of Gaza was estimated in mid-2024 at no less than \$40-50 billion over many years.<sup>29</sup> Without sufficient funds, the PNA will have to rely on international donors, in addition to local and international financial institutions, to finance relief and recovery. This might be further complicated in the next few years, due to new aid conditionality prospects emerging with the Trump presidency in the United States.

Research and development (R&D), which the PNA was not able to dedicate substantial sums to even before the war, will likely receive even less funding in current circumstances. The only official data available on research and development in Palestine, demonstrated that expenditure on R&D reached USD 61.4 million in 2013 (less than 0.01% of GDP in that year), of which only 3.7% was contributed by the private sector.<sup>30</sup> Only 11% of researchers worked in engineering and technology fields, which are more relevant for industrial innovation. While no official data on

26 International Labour Organisation and PCBS. (June, 2024). Impact of the war in Gaza on the labour market and livelihoods in the Occupied Palestinian Territory: Bulletin No. 4. <https://www.ilo.org/media/556706/download>

27 MAS. (August 2024). Palestine Economic Update. <https://mas.ps/publications/10412.html>

28 MAS. (August 2024). Palestine Economic Update. <https://mas.ps/publications/10412.html>

29 Besheer, M. (May 02, 2024). UN: Reconstructing Gaza could cost \$50 billion. VoA.

<https://www.voanews.com/a/un-reconstructing-gaza-could-cost-50-billion/7595519.html>

30 PCBS. (2014). R&D survey report 2008-2014. <https://www.pcbs.gov.ps/Downloads/book2075.pdf>



research and development has been published since, it is plausible to assume that the situation remains the same. Without sufficient funds, the PNA is likely to further de-prioritize innovation.

### 3.2 Trade dependency on Israel will further choke industry

Even before the war, various non-tariff barriers significantly undermined competitiveness and limited the volume and efficiency of trade. Israeli import controls, which Palestinian importers must navigate, impose restrictions on inputs that Palestinian manufacturers can use. In addition, the dual-use goods restrictions have been one of the most significant barriers to trade, especially in the Gaza Strip. The dual-use goods restrictions severely limit the import of certain goods that Israel claims (with little evidence) could be used for purposes that constitute a threat to Israeli security. The clearance process for dual-use items can take several months, significantly slowing down trade.

Since the onset of the war, industries have faced increased handling fees, prolonged delays, and trade disruptions with key partners.<sup>31</sup> All these barriers are only expected to become even stricter, especially given the dependency on the Israeli market for both imports and exports.

### 3.3 Additional restrictions in Area C of the West Bank

One of the main challenges for the industrial sector is the limited availability of land, which is likely to become an even more significant barrier to industrial development. More than 60% of the West Bank falls under Area C designation, where Israel retains control over security and territorial matters such as planning, zoning, building permits, and land registration, in addition to access to natural resources.

Access to Area C, is the main impediment for the development of industrial zones. For example, in Hebron, for example, the restrictions on building in Area C is leading to congestion at industrial zones, as the expansion of existing zones and the emergence of new zones are blocked by Israeli restrictions.<sup>32</sup> With government planning advancing to extend Israeli sovereignty in areas currently controlled by Israel in the West Bank, it is becoming increasingly unlikely that Palestinians will be able to expand existing zones or build new zones there. Such plans make it increasingly unlikely that Palestinians will be able to exploit their resources or increase the utilization of their land for agriculture and industry. Lack of access to high-value natural resources such as minerals and natural gas, deprives the economy of national income that has the potential to completely transform the industrial base.<sup>33</sup>

In the West Bank, Palestinian industrial establishments face significant challenges in securing affordable energy. Electricity costs \$0.18 per kWh compared to \$0.14 per kWh in Israel, \$0.16 in Jordan, \$0.06 in Egypt and \$0.04 in Egypt.<sup>34</sup> To improve energy availability and reduce costs, the PNA needs to invest in the electricity grid and infrastructure. With an even stricter Israeli control over Area C, the possibility of upgrading energy infrastructure to accommodate increasing demand starts to diminish. This is particularly concerning given the level of dependency on energy imports from Israel. Palestinians are highly dependent on Israeli energy infrastructure. The West Bank is almost entirely dependent on electricity imports from Israel (over 90% of available electricity);

31 Palestinian Federation of Industries. (August, 2024). Industrial Sector Survey in the West Bank. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions"

32 Palestine Economy Portal (2015). Industrial Zone in Hebron: An Area that Doesn't Live Up to its Name. <https://bit.ly/3B2RICZ>

33 Niksic, O; Eddin, N; and Cali, M. (2014). Area C and the Future of the Palestinian Economy. World Bank. <https://tinyurl.com/yjhw4yzz>;

34 Cable Co UK. (2021). Global Electricity per kWh Pricing 2021 [Excel sheet accessible on the source's website].

the rest is imported from Jordan (80 megawatts up from 40 megawatts recently in 2022) or domestically produced (renewable energy and private generators).

## 4. CHALLENGES AND PRIORITIES FOR REHABILITATION AND RECOVERY

### 4.1 Minimum requirements for kick-starting recovery

It remains unclear when the war on Gaza will end, and even less clear what the outcome of the war will be in terms of governance of the Gaza Strip and the reconstruction process. For this reason, planning relief and recovery for the industrial sector in the Gaza Strip is extremely challenging. Ultimately, without at least the following minimum improvements, it will not be possible to kick-start the industrial sector again:

- Entry and exit of goods: even at a smaller scale, without a mechanism for construction materials, machinery and other industrial inputs to enter Gaza, the industrial sector will struggle to recover, even partially.
- Independent infrastructure reconstruction: the reconstruction of postwar Gaza must include more independent infrastructure that would reduce Israeli control over Gaza's productive capacity. For example, independent energy generation capabilities in the form of solar PV expansion, the development of the Gaza Marine gas field, in addition to more grid connections to other electricity suppliers besides Israel (primarily Egypt) can insure the development of more sustainable productive sectors.
- Availability of funds: infrastructure capital investment needs to be supplemented by private investment into re-building factories and the purchase of investments in machinery and equipment. Industrial establishments will also need working capital in order to allow for the repurchasing of inventory supplies where needed and to cover their immediate and short-term operational costs. Frontloading a large portion of wage compensation for workers and employees who were kept out of jobs might also be needed.

### 4.2 Short-term stabilization

As soon as the war ends, the PNA should consider prioritizing support for labor retention and re-establishing operations for remaining establishments. According to PFI, around 15% of industrial establishments in Gaza are still operational.<sup>35</sup> Immediate relief efforts should focus on already operational firms, as to maintain their operations, and partially damaged firms that can potentially be back in operation with minimal support. Investment in light industries related to food production should also be prioritized to get food systems back in operation as soon as possible.

In the West Bank, where industries are still laying off labor and reducing hours and wages, a targeted, limited cash injection program to vulnerable firms, particularly those employing large numbers of workers, can help stabilize the sector. Providing working capital to companies that are cash strapped, can enable them to restart operations.

---

<sup>35</sup> Palestinian Federation of Industries. (November, 2024). Insight into the Impact of the War on the Gaza Strip on the Industrial Sector and Proposed Recovery Interventions. The document was circulated by PFI on November 14, 2024, following a workshop titled "Impact of War on the West Bank and Gaza Industrial Sectors and Proposed interventions"

## 4.3 Directing innovation towards recovery needs

### 4.3.1 Alternative industrial and agricultural inputs

#### 4.3.1.1 *The challenge*

Import substitution and market diversification is critical to fostering economic independence and resilience in Palestine, particularly given the dependency of the PNA budget on clearance revenues, which in turn accumulate due to high budget reliance on import taxes. While the Palestinian economy has achieved significant advances in reducing its reliance on Israeli imports, they continue to constitute over half (50-55%) of total imports.

Attempts to substitute important imports have faced numerous challenges, especially the inability to substitute inputs. For example, when the government attempted to localize bovine breeding (USD 96 million in imports during 2019), a few years ago, it was met with fierce retaliation from Israeli authorities and ultimately failed. The Palestinian market was not able to withstand the pressure as most of the input cost of maintaining livestock production is animal feed (over 70% of total spending). In fact, Palestinians import much more in feed than they do in bovines, with over USD 205 million of animal feed in 2019, most of which from Israel.<sup>36</sup> Similarly, despite sectors such as iron and plastics contributing significantly to industrial production, and 21% of total exports in 2022 (iron: USD 181M, plastics: USD 137M), imports in these industries are disproportionately higher (iron: USD 346M, plastics: USD 324M).<sup>37</sup> This imbalance highlights a clear opportunity to develop local manufacturing capabilities. Since that episode, a public-private investment partnership succeeded in building and operating the first Palestinian animal feed plant in the southern West Bank.

#### 4.3.1.2 *Policy priorities*

Several commodities present significant potential for import substitution, but focus should be on goods that serve as key inputs, such as electricity, animal feed, fertilizers, construction materials, plastics and metals, which form the backbone of agricultural and industrial productivity. While this sub-sector remains underdeveloped, targeted incentives, collaboration with academic institutions, and innovation-driven initiatives could unlock its potential, driving sustainable growth and bolstering industrial resilience in the face of ongoing challenges.

A clear and coordinated strategy to prioritize local production can reduce reliance on the Israeli market while bolstering the competitiveness of Palestinian industries. This approach requires integrating government policies with private sector initiatives, alongside measures to encourage public support for local products. Public sentiment to boycott Israeli produce has ballooned since the 2023 war, and a number of Palestinian light industries (including food and other consumer goods) have replaced Israeli or other imports in many local markets.

In addition, it is estimated that only 1 percent of all solid waste is currently being recycled.<sup>38</sup> The recycling and reuse sector in Palestine is relatively small and largely informal. It involves recycling materials such as glass, plastic, and paper/cardboard, which are processed into raw materials for local industries, and

36 PCBS. (2019). Registered Foreign Trade. <https://www.pcbs.gov.ps/Downloads/book2537.pdf>

37 International Trade Center. (2024). List of Products Exported by Palestine. <https://tinyurl.com/3khrwz8f>; and, International Trade Center. (2024). Trade Map - List of Products Imported by Palestine. <https://tinyurl.com/2s3nty4f>

38 Atallah, Nidal (2020). Palestine: Solid waste management under occupation. <https://bit.ly/3ZpWV1b>

to a greater extent, for industries in Israel and other countries. Metal reuse also occurs but is largely untracked in municipal waste streams, as it is collected informally by traveling trucks purchasing scrap metal from households and institutions. Surprisingly the export of scrap metal registers as one of the top five Palestinian export categories, after stones/marble and re-exports! Notable examples of waste separation and recycling include the Al Menya Landfill, where materials like plastic, metal, cardboard, and glass are sent for recycling, and organic waste is processed into low-quality compost used on-site.

However, efforts like these need to be significantly scaled up to increase the proportion of recycled waste, especially since most current initiatives remain in the pilot phase and have not yet achieved the desired impact at the national level. To scale successful efforts nationally, it is essential to develop a framework for public-private partnerships, whereby the government invests more in enhancing existing waste management infrastructure and waste separation, and private players invest in waste collection and recycling.

To support this shift, industrial and commercial policies should focus on developing specifications and standards to maintain product quality and consumer safety. Reforming industrial licensing policies and investing in the development of services such as product licensing, packing, labeling, and light assembly within industrial zones to provide time- and cost-saving options for businesses, will be crucial. A stronger role for financing institutions, coupled with incentives for private enterprises, can drive the growth of these sectors and create a sustainable foundation for import substitution.

To advance import substitution efforts, it further is essential to strengthen oversight and support mechanisms for importers of key goods. The regulatory authority for taxation and customs police should be instructed to audit and monitor the activities of importers specifically dealing with select goods from Israel. This will ensure compliance and encourage a shift toward alternative sources or local products.

#### *4.3.1.3 Innovation priorities*

In the Gaza Strip, streamlining the recycling of rubble and other materials can allow certain local industries such as construction materials manufacturing, and light metal fabrication, paper and furniture manufacturing, to start operating with less reliance on imported inputs.

Investments in advanced plastics production and the recycling of iron scraps for higher-value products, such as screws, razors, and machinery parts, could reduce dependence on imports while diversifying industrial output.<sup>39</sup> For example, strategic investment in expanding local machine production—using scrap metals to manufacture machinery components—could establish a foundation for broader industrial capabilities. Similarly, investments in recycling waste from agricultural production and food processing, combined with research and development into the development of alternative inputs for animal feed, can gradually replace concentrated feed pellets or concentrated bulks.

### **4.3.2 Market information systems**

#### *4.3.2.1 The challenge*

Palestinian industrial firms, the absolute majority of which are micro, small and medium businesses, are constrained by limited research capacities.<sup>40</sup> The fragmented nature of Palestinian companies

<sup>39</sup> International Trade Center. (2024). List of Products Exported by Palestine. <https://tinyurl.com/3khrwz8f>; and, International Trade Center. (2024). Trade Map - List of Products Imported by Palestine. <https://tinyurl.com/2s3nty4f>

<sup>40</sup> Fallah, Belal (2019). Skills Shortages and Gaps in the Industrial Sector in the Occupied Palestinian Territory. MAS <https://mas.ps/en/publications/2875.html>

and their limited resources hinder their ability to conduct market research and engage in effective marketing efforts to find buyers and promote their goods.

Many industrial firms lack the scale and resources to fully identify the specific needs and preferences of consumers, even in the local market. This hampers their ability to develop effective product strategies, make informed pricing decisions, and compete effectively. Smaller local companies lack the capabilities to identify which products have market demand and often lack information on certifications and labeling requirements, such as organic certifications.<sup>41</sup> Limited knowledge and expertise in marketing, branding, and sales pose challenges for companies looking to expand. Companies may struggle to effectively promote and position their products, hindering their ability to reach target customers and maximize export opportunities.

When it comes to export, many local companies often struggle with identifying and meeting the complex requirements of foreign markets. This includes aspects such as food safety testing, packaging standards, and obtaining certifications like “organic” labels.<sup>42</sup> The lack of knowledge and resources in this regard creates barriers to entry and limits export potential.

#### *4.3.2.2 Policy direction*

Improving access to market information, by establishing easy-to-access support platforms, and providing assistance in marketing products abroad for Palestinian businesses is a less capital-intensive approach to improving industrial efficiency. By empowering Palestinian businesses with these resources and support, the aim is to enhance their competitiveness and expand their reach in global markets.

Industries that target consumer markets, such as food processing, textile, footwear and traditional industries can greatly benefit from the initiative to improve access to up-to-date information on market trends and demands. Improved information flows can help these industries increase sales, by aligning their offerings with consumer preferences and actively promoting Palestinian produce locally and internationally.

#### *4.3.2.3 Innovation priorities*

The following are the key innovation focus areas that have the potential to enable more efficient industrial growth and cost-cutting, even with limited funds:

1. **Product development:** platforms that offer companies access to comprehensive and accessible insights for informed product strategy decisions, enabling companies to align their offerings with changing market demands. Additionally, such platforms can serve as a centralized source of up-to-date market requirements, helping companies navigate regulations, standards, and certifications specific to each target market.
2. **Trade support:** platforms that offer companies access to up-to-date data about import and export requirements, in addition to a notification system to inform traders of changes in regulations in Israel and internationally. Similar platforms exist in Israel, but are in Hebrew and not accessible to Palestinian traders.

---

41 International Labour Organization (2014). Chapter 6: The Palestine Fair Trade Association (PFTA), occupied Palestinian territory. Rural employment and decent work Programme. <https://www.ilo.org/publications/chapter-6-palestine-fair-trade-association-pfta-occupied->

42 International Labour Organization (2014). Chapter 6: The Palestine Fair Trade Association (PFTA), occupied Palestinian territory. Rural employment and decent work Programme. <https://www.ilo.org/publications/chapter-6-palestine-fair-trade-association-pfta-occupied-palestinian>

3. Marketing and branding: platforms where companies can seek expert advice and support in branding, marketing, and related areas. This platform would offer tailored guidance, helping companies develop effective marketing strategies, enhance their branding efforts, and position their products effectively in international markets. By equipping companies with the necessary skills and knowledge, they can increase their visibility, attract target customers, and ultimately boost export opportunities.

#### 4.3.3 Energy efficiency

##### 4.3.3.1 The challenge

In Palestine, the high solar energy potential with approximately 3,000 sunshine hours annually offers a path to greater energy independence and economic resilience.<sup>43</sup> It further is estimated that investing in solar energy provides a substantial boost to job creation, at 7.5 full-time jobs for every USD 1 million invested in solar energy, compared to traditional fossil fuel industries at 2.65.<sup>44</sup>

Despite great potential, a major limitation to the expansion of solar energy projects is the capacity of the electricity grid. Palestine faces significant challenges in distributing electricity efficiently due to high loads on local transmission grids and limited control over the 161kV transmission lines required for long-distance electricity transport. This inability to evacuate electricity to large demand hubs across the West Bank hampers the reliable distribution of power, particularly in areas with high electricity needs. Additionally, surplus energy generated by utility solar PV projects often exacerbates grid loading issues, increasing the risk of equipment failure, inefficiencies, and higher costs for both utilities and consumers. With rapid settlement expansion and tightening of restrictions on Area C, upgrading Palestinian electricity grid, and energy infrastructure more generally, may become significantly more restricted.

##### 4.3.3.2 Policy direction

The PNA and other energy sector stakeholders and donors should also consider expanding renewable energy projects by focusing on measures that enhance efficiency at a decentralized factory-level. While decentralized approaches are typically more costly, and are not an alternative to infrastructural development, they can improve resilience, and (if restrictions remain) even efficiency.

Successful implementation requires close coordination among private renewable energy companies, electricity distribution companies, the Palestinian Energy and Natural Resources Authority, and municipal electricity providers.

##### 4.3.3.3 Innovation priorities

The following are some innovation focus areas that have the potential to enable more efficient energy infrastructure, even with existing restrictions on building in Area C:

1. Enabling industrial firms to measure energy efficiency: sub-meter installations allow manufacturers to gain clearer insights into consumption patterns across departments, leading to more informed resource management.<sup>45</sup>

---

43 Hamada, S., & Ghodieh, A. (2021). Mapping of Solar Energy Potential in the West Bank, Palestine Using Geographic Information Systems. *Papers in Applied Geography*, 7(3), 256–273. <https://doi.org/10.1080/23754931.2020.1870540>

44 Heidi Garrett-Peltier. (2017). Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. *Economic Modelling*, 61, Pages 439-447.

45 Moustadama. (2024). Do More With Less Brochure. <https://tinyurl.com/ys6yc3tb>

2. Identify firm-level inefficiencies: nationwide energy assessments and expert consultations for resource-heavy industries (energy audits). Through energy-saving measures such as improved insulation, air curtains, and machinery upgrades, significant reductions in energy waste can be achieved
3. Energy storage and distribution: Integrating Battery Energy Storage Systems (BESS) with utility-scale solar PV projects, would tackle grid inefficiencies, manage supply fluctuations, and optimize the use of renewable energy, paving the way for a more sustainable energy infrastructure. By efficiently storing excess energy and releasing it during periods of peak demand, BESS reduces grid overloading, enhances stability, and minimizes operational inefficiencies. This combination of technologies offers a sustainable solution to manage supply fluctuations while improving grid stability, energy reliability, and the overall efficiency of electricity distribution systems.<sup>46</sup>

## 5. CONCLUSIONS

The war on Gaza has dealt a devastating blow to the Palestinian industrial sector, exacerbating pre-existing economic vulnerabilities and severely disrupting livelihoods, trade, and productivity. Despite these immense challenges, the sector holds potential as a driver of relief, recovery, and long-term resilience if innovative strategies and international collaboration are effectively mobilized.

Key to recovery will be rebuilding infrastructure, facilitating the entry and exit of goods, and stabilizing cash flows for industrial establishments. Prioritizing labor retention, supporting light industries essential for food production, and implementing targeted cash injections can help prevent further economic deterioration. In parallel, fostering innovation in import substitution, renewable energy, and market information systems can reduce dependency on external actors and create a foundation for self-reliance.

Sustainable recovery also demands a shift in policy focus. Trade policies must reduce reliance on Israeli inputs and markets, while industrial development must address energy inefficiencies, land access restrictions, and inadequate infrastructure. Investment in local manufacturing capabilities and alternative inputs, coupled with regulatory reforms and public-private collaboration, will be vital.

Given the PNA's constrained fiscal capacity, the role of international donors, the private sector, and global stakeholders will be indispensable. Aligning recovery strategies with broader political solutions is crucial, as only meaningful political change can unlock the structural barriers hindering Palestine's industrial and economic revival.

Ultimately, rebuilding Gaza's industrial sector is not just an economic imperative—it is a pathway to resilience, dignity, and sustainable development for Palestine. By harnessing innovation and fostering inclusive collaboration, stakeholders can transform this crisis into an opportunity for recovery and growth.

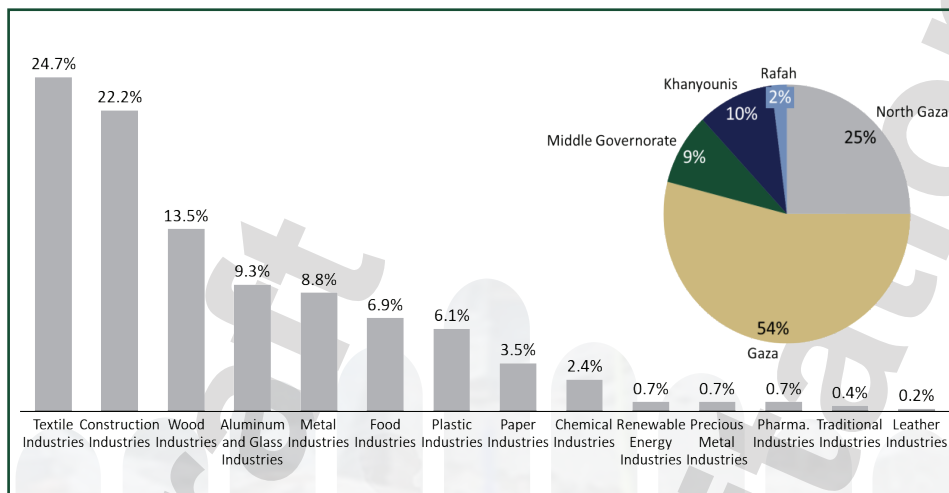
---

<sup>46</sup> Martinez-Bolanos, J., Udaeta, M., Gimenes, A., and Silva, V. (2020). Economic feasibility of battery energy storage systems for replacing peak power plants for commercial consumers under energy time of use tariffs. *Journal of Energy Storage*, 29. <https://doi.org/10.1016/j.est.2020.101373>; and, The World Bank Group. (2020). Economic Analysis of Battery Energy Storage Systems. <https://documents1.worldbank.org/curated/en/222731592289791721/pdf/Economic-Analysis-of-Battery-Energy-Storage-Systems.pdf>

## Annex I | Palestine Federation of Industries Surveys Breakdown

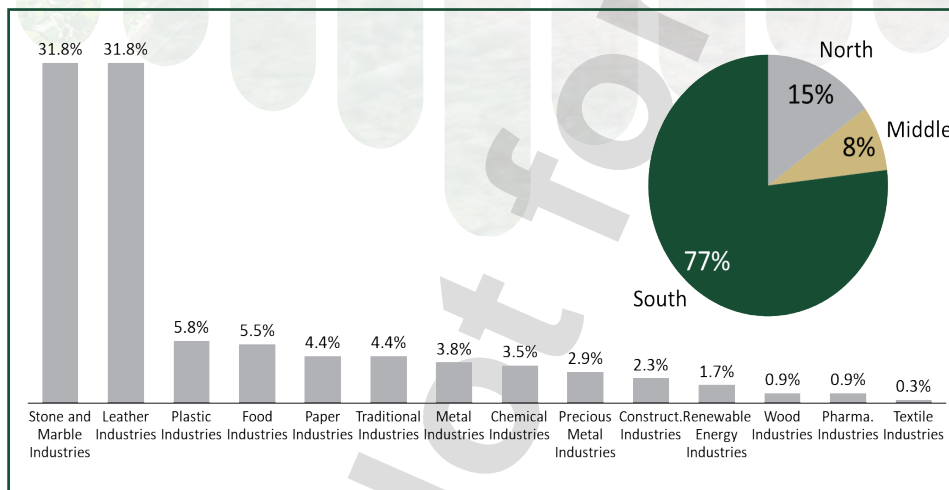
This annex is dedicated to the surveys conducted by the PFI in the West Bank and Gaza Strip. The Gaza Strip survey was conducted in June 2024 and updated in October 2024. Data was collected from 1,200 industrial establishments across 14 industrial sectors in all governorates of the Gaza Strip, broken down in the figure below.

**Figure 5: Gaza Strip PFI Survey Breakdown**



The West Bank survey was conducted in July and August 2024, collecting data from 345 industrial establishments across 14 industrial sectors across the governorates of the West Bank as seen in the figure below.

**Figure 6: West Bank PFI Survey Breakdown**





**Draft**

**Not for Citation**